

## REMARKS

Claims 1-30 are pending in the present application.

This Amendment is in response to the Office Action mailed April 2, 2003. In the Office Action, the Examiner rejected claims 1-6, 11-16, 21-26 under 35 U.S.C. §102(e); and claims 10, 20, 30 under 35 U.S.C. §103(a). In addition, the Examiner indicated allowable subject matter for claims 7-9, 17-19, and 27-29 if they are rewritten in independent form including all of the limitations of the base claim and any intervening claims. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

### I. REJECTION UNDER 35 U.S.C. §102(e)

In the Office Action, the Examiner rejected claims 1-6, 11-16, and 21-26 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,393,522 issued to Campbell ("Campbell"). Applicants respectfully traverse the rejection and contends that the Examiner has not met the burden of establishing a *prima facie* case of anticipation.

Applicants reiterate the arguments set forth in the previously filed Response to the Office Action.

Campbell discloses a method and apparatus for cache memory management. A cache eviction location determining logic determines which of first L2 cache and second L2 cache should be used to evict data from either of first L1 cache or second L1 cache. (Campbell, col. 3, lines 47-50). The eviction is performed on the basis of the amount of empty space, or conversely, allocated space, of the first L2 cache and the second L2 cache (Campbell, col. 3, lines 50-52).

Campbell does not disclose, either expressly or inherently, (1) a cache management logistics to control transfer of a trace, (2) a first cache to evict the trace based on a replacement mechanism, and (3) a second cache to receive the evicted trace based on number of accesses.

First, Campbell does not disclose a cache management logistics to control transfer of a trace. As supported in the specification, a trace is defined as a sequence of basic blocks that have been executed and is identified by its starting address and its branch outcomes (see specification, page 5, lines 10-16). Second, Campbell merely discloses a first L2 cache and second L2 cache to receive any one of evicted data from the first L1 cache or the second L1 cache. In other words,

any one of the L2 and second L2 caches may receive evicted data according to space allocation. On the contrary, the present invention teaches a first cache to evict the trace, and the second to receive evicted trace. Third, Campbell does not disclose evict trace based on a replacement mechanism. As explicitly stated, Campbell merely disclose eviction based on space allocation (Campbell, col. 3, lines 50-51). Fourth, Campbell does not disclose receiving the evicted trace based on the number of accesses. As discussed above, Campbell merely disclosed evicting based on space allocation.

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Vergegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ 2d 1913, 1920 (Fed. Cir. 1989). Since the Examiner failed to show that Campbell teaches or discloses any one of the above elements, the rejection under 35 U.S.C. §102 is improper.

Therefore, Applicants believe that independent claims 1, 11, 21 and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicants respectfully request the rejection under 35 U.S.C. §102(e) be withdrawn.

## II. REJECTION UNDER 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 10, 20, and 30 under 35 U.S.C. §103(a) as being unpatentable over Campbell in view of The "Cache Memory Book", 1993, Academic Press, pp. 37-107, by Jim Handy ("Handy"). Applicants respectfully traverse the rejection and contends that the Examiner has not met the burden of establishing a *prima facie* case of obviousness.

Applicants reiterate the arguments set forth in the previously filed Response to the Office Action. Campbell discloses a method and apparatus for cache memory management as discussed above. Handy discloses a design of a cache memory.

Campbell and Handy, taken alone or in any combination, does not disclose, suggest, or render obvious a cache management logistics to control transfer of a trace, a first cache to evict

the trace based on a replacement mechanism, and a second cache to receive the evicted trace based on number of accesses.

There is no motivation to combine Campbell and Handy because neither of them addresses the problem of trace cache filtering. There is no teaching or suggestion that a cache management logistics to control transfer of a trace, a first cache to evict the trace, and a second cache to receive the evicted trace is present. Campbell and Handy, read as a whole, does not suggest the desirability of filtering a trace cache. For the above reasons, the rejection under 35 U.S.C. §103(a) is improperly made.

The Examiner failed to establish a *prima facie* case of obviousness and failed to show there is teaching, suggestion or motivation to combine the references. "When determining the patentability of a claimed invention which combined two known elements, 'the question is whether there is something in the prior art as a whole suggest the desirability, and thus the obviousness, of making the combination.'" In re Beattie, Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 1462, 221 USPQ (BNA) 481, 488 (Fed. Cir. 1984). To defeat patentability based on obviousness, the suggestion to make the new product having the claimed characteristics must come from the prior art, not from the hindsight knowledge of the invention. Interconnect Planning Corp. v. Feil, 744 F.2d 1132, 1143, 227 USPQ (BNA) 543, 551 (Fed. Cir. 1985). To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the Examiner to show a motivation to combine the references that create the case of obviousness. In other words, the Examiner must show reasons that a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the prior elements from the cited prior references for combination in the manner claimed. In re ROUFFET, 149 F.3d 1350 (Fed. Cir. 1996), 47 USPQ 2d (BNA) 1453. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or implicitly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973. (Bd.Pat.App.&Inter. 1985).

In the present invention, the cited references do not expressly or implicitly suggest (1) a cache management logistics to control transfer of a trace, (2) a first cache to evict the trace based on a replacement mechanism, and (3) a second cache to receive the evicted trace based on

number of accesses. In addition, the Examiner failed to present a convincing line of reasoning as to why a combination of Campbell and Handy is an obvious application of trace cache filtering.

Therefore, Applicants believe that independent claims 1, 11, 21 and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicants respectfully request the rejections under 35 U.S.C. §103(a) be withdrawn.

## CONCLUSION

In view of the amendments and remarks made above, it is respectfully submitted that the pending claims are in condition for allowance, and such action is respectfully solicited.

Respectfully submitted,

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